

REMARKS

Claims 11, 15, 16 and 18 are rejected under 35 USC 103(a) as being unpatentable over Stock in view of Moeller and further in view of Allison. Claims 13 and 17 are rejected under 35 USC 103(a) as being unpatentable over Stock in view of Moeller and further in view of Allison and further in view of Bai. Claim 14 is rejected under 35 USC 103(a) as being unpatentable over Stock in view of Moeller and further in view of Allison and further in view of Bai and further in view of Johnson. Claim 19 is rejected under 35 USC 103(a) as being unpatentable over Stock in view of Allison. Claim 20 is rejected under 35 USC 103(a) as being unpatentable over Bai in view of Allison.

Reconsideration and withdrawal of each of the rejections is respectfully requested in view of the following.

It is admitted that Stock does not disclose that the pulse spreading is linear, the propagation medium being linear, or that the spreader module comprises a fiber of the high order mode type, or of the super large area type. Allision is cited as disclosing the use of linear fiber of the high order mode type for optical pulse broadening.

Allison describes the use of very high numerical aperture (VHNA) fibers and explains in this context that the difference in travel distance between the various modes (in particular the higher order modes and the lower order modes) provides temporal pulses broadening, a phenomenon called modal dispersion.

However, the mere fact of having higher order modes in a fiber does not imply that this fiber is of the high order mode type.

In addition, the modal dispersion phenomenon used in Allison is clearly distinct from the chromatic dispersion phenomenon used in the claimed invention and, as Allison relates to very high numerical aperture fibers in order to obtain pulse broadening by modal dispersion, this document cannot be suggestive of a fiber of the high order mode type presenting an accumulated chromatic dispersion to broaden and lower the pulses.

To be complete, it can be explained that chromatic dispersion is due to differences in the speed of propagation between wavelengths in the fiber (not between modes): as the propagation speed is different depending on the wavelength, there is a time difference in the propagation of different components of the signal with respectively different wavelengths, which create a broadening of a pulse.

It is clear from this explanation that modal dispersion and chromatic dispersion work based on different physical principles and that one cannot be obviously suggestive of the other for a normal practitioner in the art.

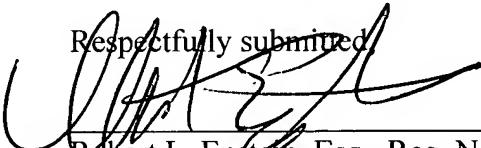
As a consequence, even admitting for the sake of argumentation that the various documents could be combined as asserted by the Examiner, they would not disclose nor

suggest the use of chromatic dispersion in a fiber of the high order mode type or a fiber of the super large area type.

In order to better highlight the novelty of Applicant's invention, claims 11, 16, 19 and 20 have been amended to require that the propagation medium is a fiber of the high order mode type or a fiber of the super large area type. Further, claim 20 has also been amended to require presenting accumulated chromatic dispersion that is high enough to lower the peak power of the pulse to below a predetermined threshold where a signal above said threshold is subjected to non-linear distortion in the line fiber.

It is respectfully submitted that none of the references cited, whether considered individually or in combination teach the features of the claims as amended or render same unpatentable.

Respectfully submitted,



Robert L. Epstein, Esq., Reg. No. 26451
EPSTEIN DRANGEL
BAZERMAN & JAMES, LLP
Attorneys for Applicant
60 East 42nd Street, Suite 820
New York, New York 10165
Tel. No.: (212) 292-5390
Fax. No.: (212) 292-5391